

The Roaring Creek Projects

Decision Rationale

Environmental Assessment Number OR086-07-02

February 2008

United States Department of the Interior
Bureau of Land Management
Oregon State Office
Salem District
Tillamook Resource Area

Township 1 South, Range 5 West, Sections 19, 29, 31, 33, 34 and 35,
Township 2 South, Range 5 West, Sections 1 and 3,
and Township 1 South, Range 6 West, Section 25, Willamette Meridian
Tualatin River 5th field Watershed
Washington and Yamhill Counties, Oregon

Responsible Agency: USDI - Bureau of Land Management

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As the Nation's principal conservation agency, the Department of Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering economic use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

BLM/OR/WA/AE-07/007+1792

I. INTRODUCTION

The Bureau of Land Management (BLM) conducted an environmental analysis documented in *The Roaring Creek Projects Environmental Assessment* (EA # OR086-07-02) and the associated project file. The proposed projects include 1) commercial density management thinning on approximately 906 acres of 36-75 year old, relatively dense Douglas-fir stands, construct and then decommission approximately four miles of new temporary road, renovate and then decommission about 5.6 miles of existing roads, and decommission another 1.0 miles of existing roads; 2) fish habitat restoration activities along 1.1 miles of stream segments that will not be treated with density management, and decommissioning of approximately 1.4 miles of existing road; and 3) wildlife habitat enhancement treatment on approximately 323 acres that will not be treated with density management. A Finding of No Significant Impact (FONSI) was signed on November 1, 2007 and the EA and FONSI were then made available for public review.

The decision documented in this Decision Rationale (DR) is based on the analysis documented in the EA.

II. DECISION

Project 1 – Commercial Density Management Thinning

I have decided to implement the Roaring Creek Commercial Density Management Thinning Project as described in Alternative 2 (EA pp.17-26). This decision is based on site-specific analysis in the Roaring Creek Projects Environmental Assessment (EA # OR086-07-02), the supporting project record, management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis; as well as the management direction contained in the *Salem District Record of Decision/Resource Management Plan* (ROD\RMP) (May 1995), which are incorporated by reference in the EA. Hereafter, Alternative 2 is referred to as the “selected alternative”. The maps of the selected alternative can be found on pages 7-13 of this Decision Rationale.

The project will be implemented through four commercial timber sales, as follows:

Timber Sale Name	Treatment Areas from EA	Anticipated Year of Sale (Fiscal Year)
Blind Barney	25-1, 25-2	2008
Hagerty Ridge	29-1, 29-2, 29-3, 29-4, 31-1, 31-2, 33-1 (portion north of Roaring Creek)	2009
Cherry Sunday	1-1, 3-1, 19-1, 19-4, 19-5, 35-2, 35-1	2009
Four Corners	33-1 (portion south of Roaring Creek)	2010

Modifications:

Riparian Reserves in section 1 will be thinned down to a Curtis relative density of .30 instead of

.25 as proposed in the silvicultural prescription. The reason for this change is to comply with the existing programmatic consultation for fish in the Willamette basin, which is addressed in more detail on page 20 of this Decision Rationale.

Decision Summary:

1. **Timber Harvest:** Approximately 906 acres of 36-75 year old predominantly Douglas-fir stands will be thinned from below in a variable-spaced manner by removing suppressed, co-dominant, and occasional dominant trees (thinning from below). In general, the larger-diameter conifers with relatively high live crown ratios and healthy appearing crowns will be retained, regardless of spacing. Thinning will occur only in the Douglas-fir component because it is the most abundant species, and existing western hemlock and western redcedar in the understory will be retained to encourage *mixed-species* stands. All hardwood trees are to be retained and counted toward achieving the recommended basal area target levels. As identified in the *Late-Successional Reserve Assessment for Oregon's Northern Coast Range Adaptive Management Area* (January 1998) (LSRA), trees greater than or equal to the diameter cutting limits shall be reserved from harvest, with the majority of larger trees incidentally felled to facilitate harvest being left on site as coarse woody debris. Approximately 60 percent of the project area will be harvested using conventional ground-based logging equipment, and the remaining 40 percent will be harvested using skyline yarding systems.
2. **Road Work:** Approximately four miles of new temporary road construction will occur on BLM and private lands to access the treatment areas. Another 5.6 miles of existing roads under BLM and private control will be renovated as necessary to accommodate log-hauling. The approximately 9.6 miles of new and renovated roads will be decommissioned and blocked following timber harvest and site preparation operations. Another 1.0 miles of existing road will also be decommissioned, for an overall net reduction of 6.6 miles of road as a result of this project. Decommissioning will include removal of nine stream-crossing culverts, ripping compacted soils, reestablishing natural drainage patterns, out-sloping the road surface so that water drains quickly to stable slopes, seeding and/or planting the road surface and adjacent areas of exposed mineral soils, blocking access and/or scattering woody debris on the road surface.
3. **Fuel Treatments:** Fuel treatment strategies will be implemented on portions of the project areas. Strategies will include directional falling (to keep slash away from fuel breaks), followed by a reduction of surface fuels in order to reduce both the intensity and severity of potential wildfires in the long term (after fuels reduction has occurred). Fuels reduction will be accomplished by burning of slash piles, which will be created by hand or mechanical methods.

All design features described in the EA (pp. 23-26) are incorporated into the timber sale contract.

Project 2 – Fish Habitat Restoration

I have decided to implement the Roaring Creek Fish Habitat Restoration Project as described in

Alternative 2 (EA p. 78). This decision is based on site-specific analysis in the Roaring Creek Projects Environmental Assessment (EA # OR086-07-02), the supporting project record, management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis; as well as the management direction contained in the *Salem District Record of Decision/Resource Management Plan* (ROD\RMP) (May 1995), which are incorporated by reference in the EA. Hereafter, Alternative 2 is referred to as the “selected alternative”. The maps of the selected alternative can be found on pages 7-13 of this Decision Rationale.

Modifications:

None.

Decision Summary:

1. ***In-Stream Log Placement:*** Fisheries habitat restoration will occur on BLM lands on approximately 1.1 miles of Roaring Creek, a tributary to the Tualatin River. The project will involve the in-stream placement of up to 60 logs (from 30 trees) with diameters of 20-32 inches and lengths of up to 60 feet utilizing heavy equipment (excavator or spyder). The existing levels of large wood within the proposed project area do not meet either the ODFW standards (48 pieces/mile) or NOAA Fisheries standards (80 pieces/mile). This will result in more variations in stream velocities which will create greater habitat diversity for fish and other aquatic life.
2. ***Riparian Planting:*** In an effort to plan for long-term instream wood sources this project will plant the riparian zone along approximately 1.1 miles of stream with shade tolerant tree species (western red cedar, hemlock). In addition, existing conifers struggling underneath the alder-dominated canopy will be released by felling enough of the alders to increase the amount of sunlight reaching the conifers.
3. ***Road Work:*** In addition to the log placement and riparian planting, approximately 1.4 miles of existing road will be decommissioned. Decommissioning will include removal of nine stream-crossing culverts, ripping compacted soils, reestablishing natural drainage patterns, out-sloping the road surface so that water drains quickly to stable slopes, seeding and/or planting the road surface and adjacent areas of exposed mineral soils, blocking access and/or scattering woody debris on the road surface.

The selected alternative includes all the design features described in the EA (pp. 78-79).

Project 3 – Wildlife Habitat Enhancement

I have decided to implement the Roaring Creek Wildlife Habitat Enhancement Project as described in Alternative 2 (EA pp. 104-105). This decision is based on site-specific analysis in the Roaring Creek Projects Environmental Assessment (EA # OR086-07-02), the supporting project record, management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis; as well as the management direction contained in the *Salem District Record of Decision/Resource Management Plan* (ROD\RMP) (May 1995), which are incorporated by

reference in the EA. Hereafter, Alternative 2 is referred to as the “selected alternative”. The maps of the selected alternative can be found on pages 7-13 of this Decision Rationale.

Modifications:

None.

Decision Summary:

Habitat enhancement that will benefit a variety of wildlife species will occur on approximately 323 acres of upland or riparian forest. Although trees up to 36 inches DBH may be treated, it is expected that this project would primarily treat trees up to approximately 30 inches DBH. In general, the project would treat up to an average of five trees per acre scattered throughout the units. The project may include felling of green trees, girdling green trees at the base as well as within the live crown, topping green trees and/or potentially inoculating trees with a heart rot fungus to enhance wildlife habitat. Other potential design features include using CWD creation in such a way as to mimic bark beetle pockets and maximize the potential benefits through also releasing individual understory and/or overstory trees; some of these treated trees would be located in small clumps of up to about five trees or be used to surround individual selected overstory trees with a ring of created snags.

The selected alternative includes all the design features described in the EA (pp. 105-107).

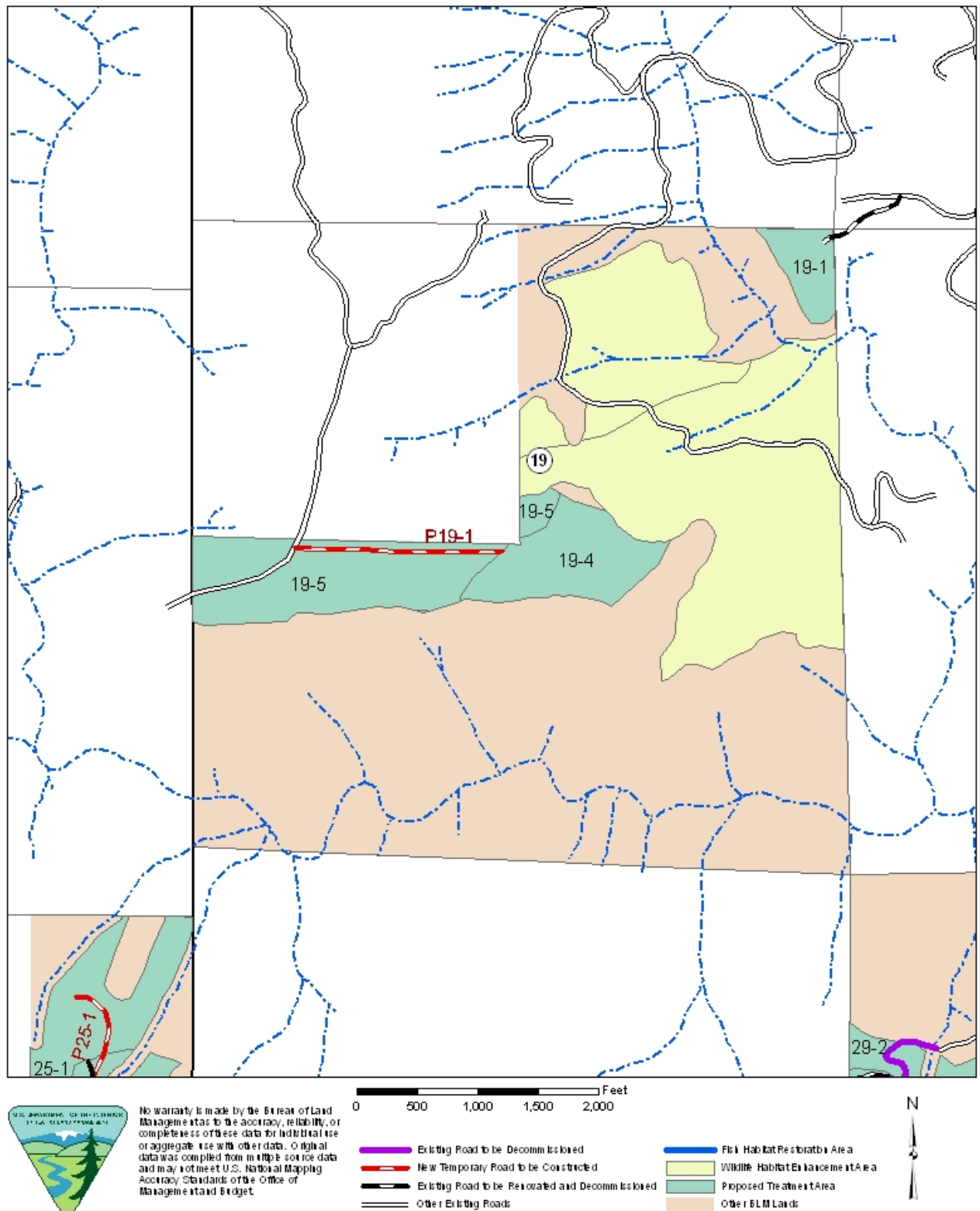
III. COMPLIANCE WITH DIRECTION

The analysis documented in the Roaring Creek Projects EA is site-specific and supplements analyses found in the *Salem District Proposed Resource Management Plan/Final Environmental Impact Statement*, September 1994 (RMP/FEIS). These projects have been designed to conform to the *Salem District Record of Decision and Resource Management Plan*, May 1995 (ROD/RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA pp. 13-15). All of these documents may be reviewed at the Tillamook Resource Area office.

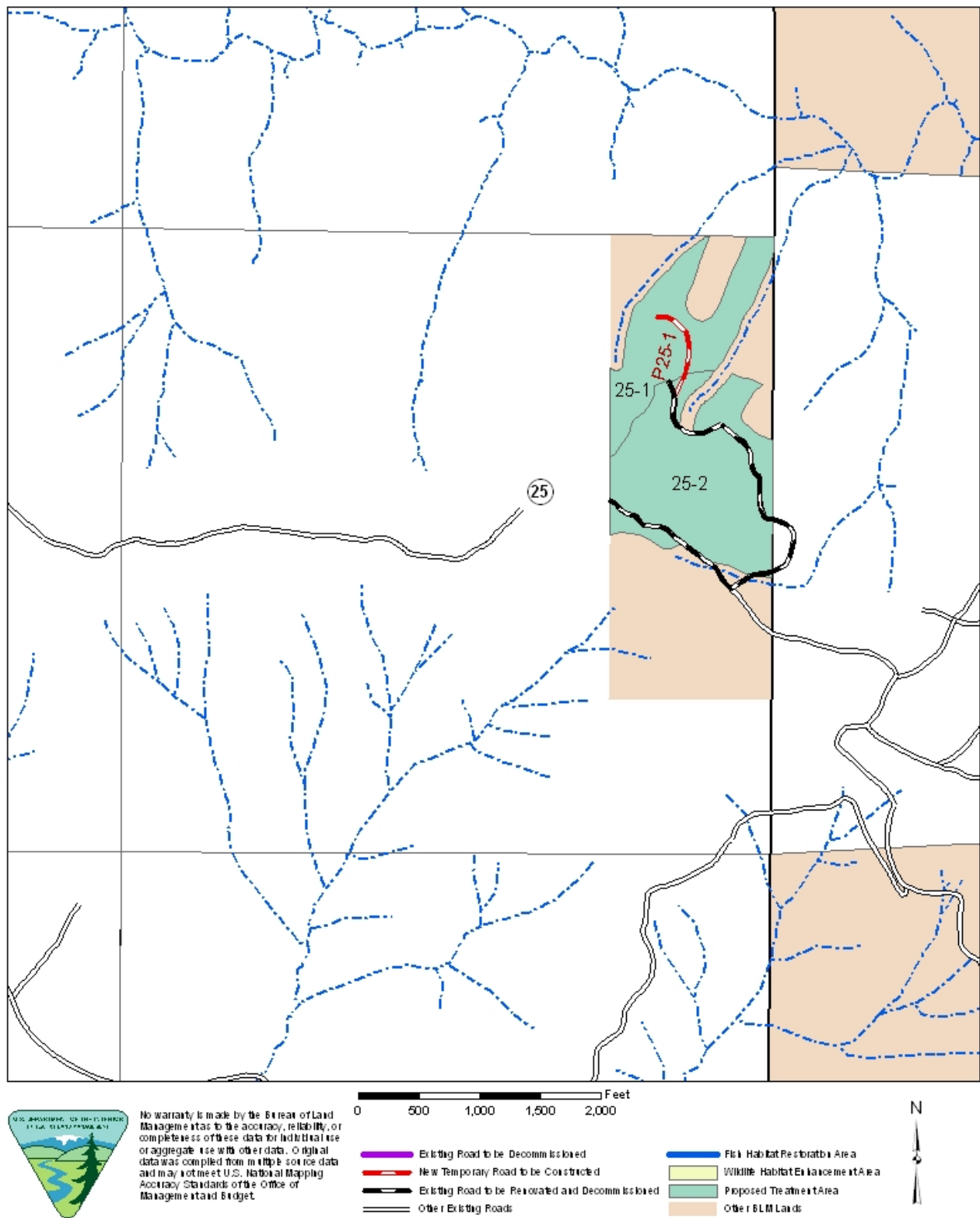
Survey and Manage Species Review:

- This project fully complies with *The Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (July 2007).

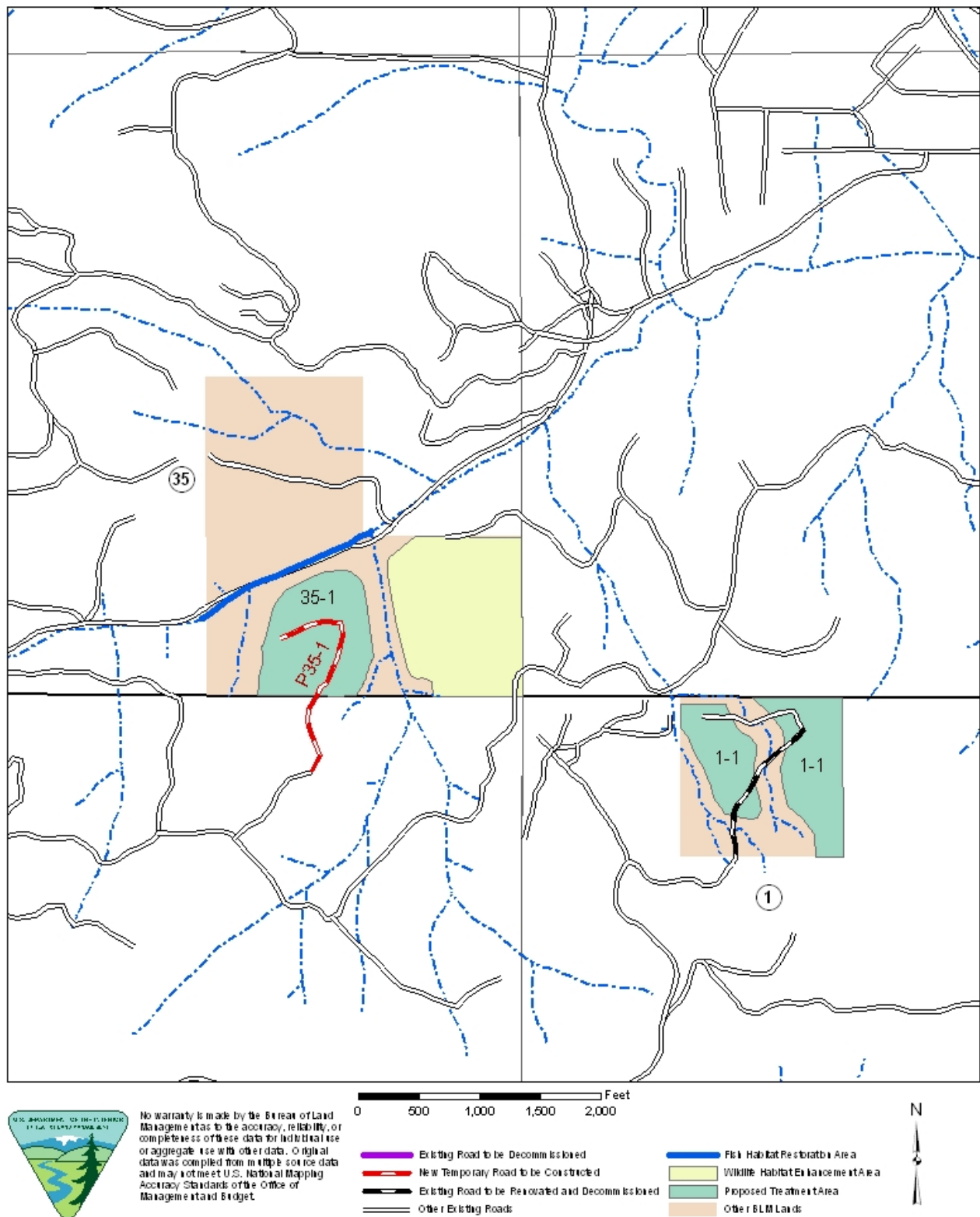
Map 1 - T1S R5W Section 19



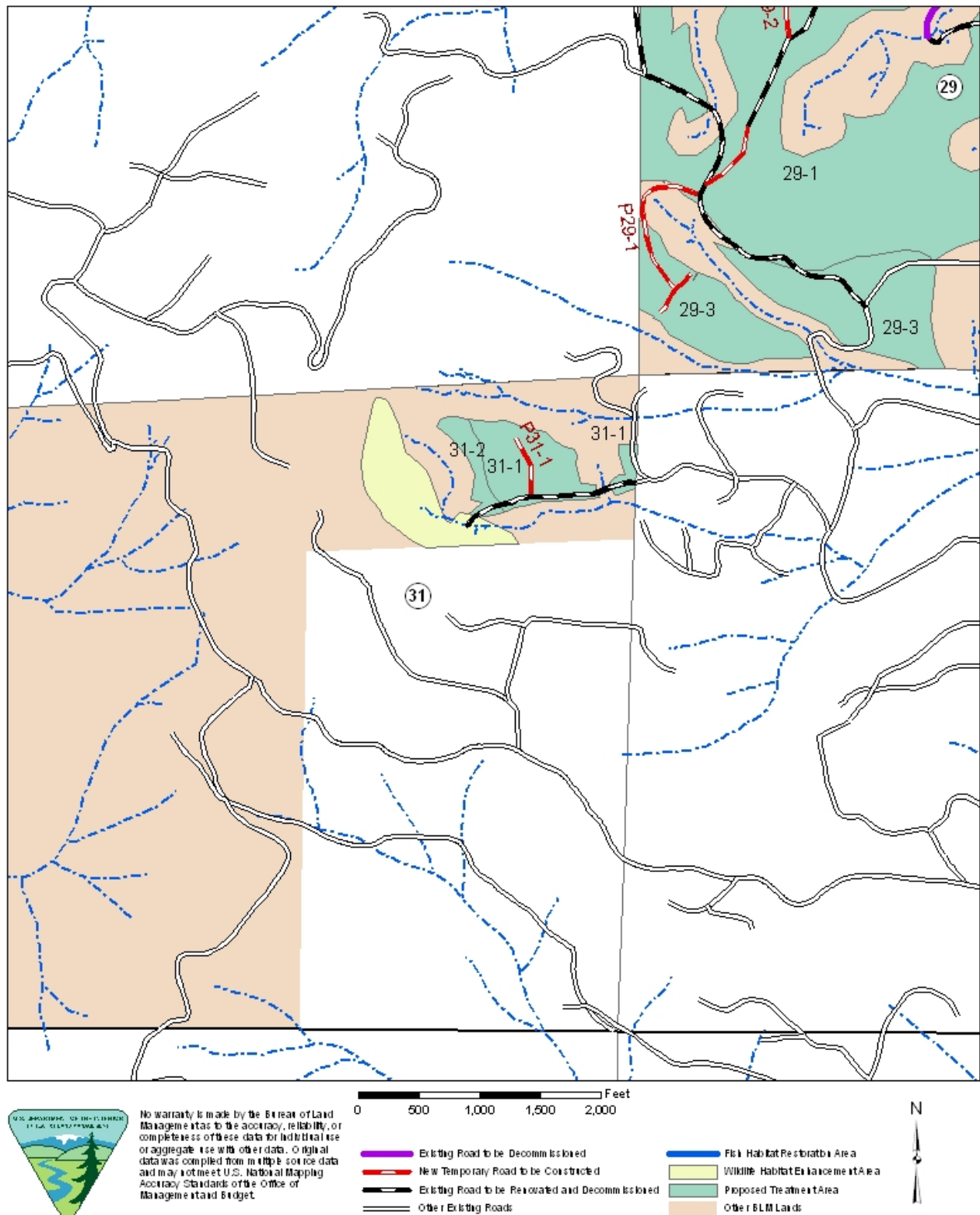
Map 2 - T1S R6W Section 25



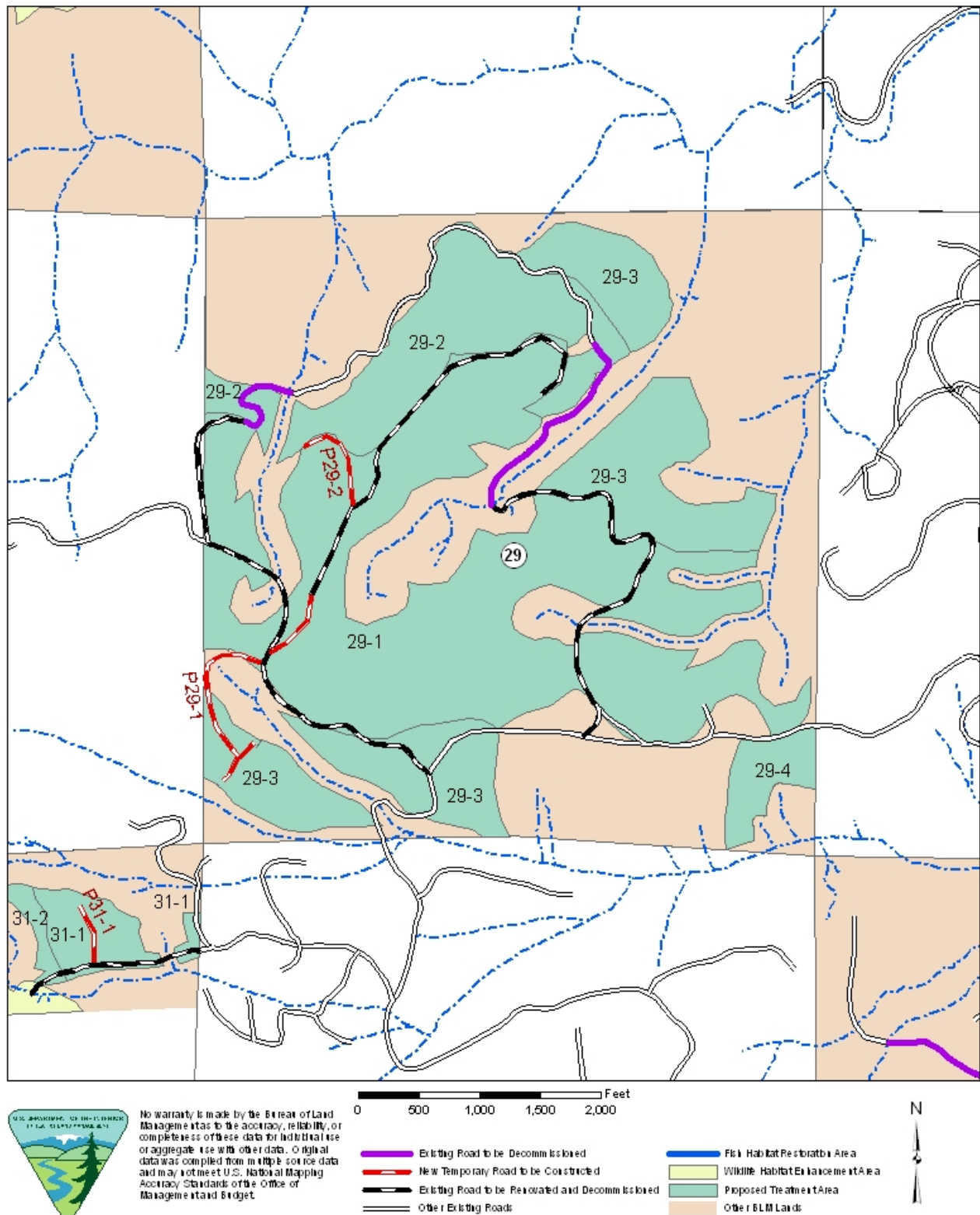
Map 3 - T1S R5W Section 35 and T2S R5W Section 1



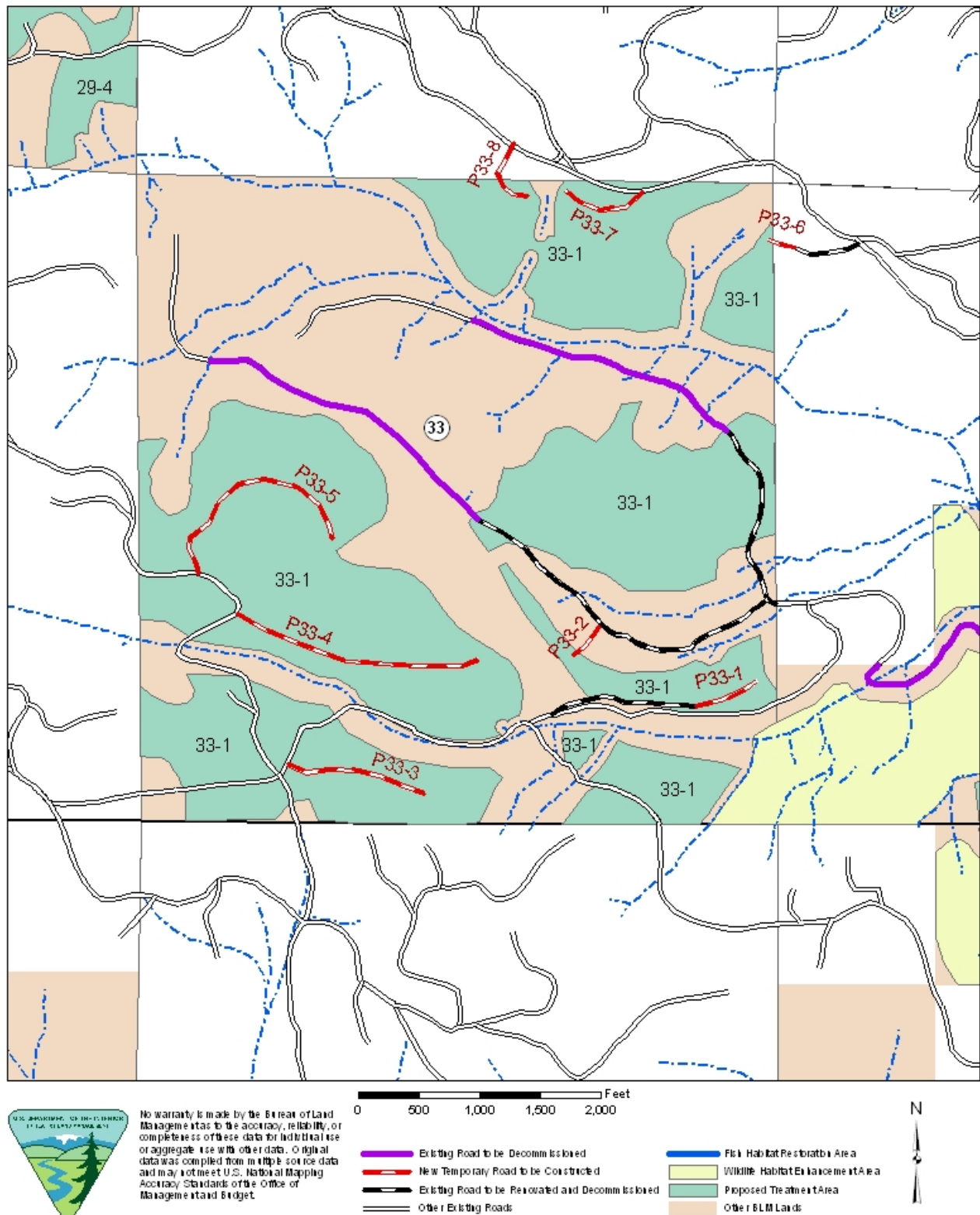
Map 4 - T1S R5W Section 31



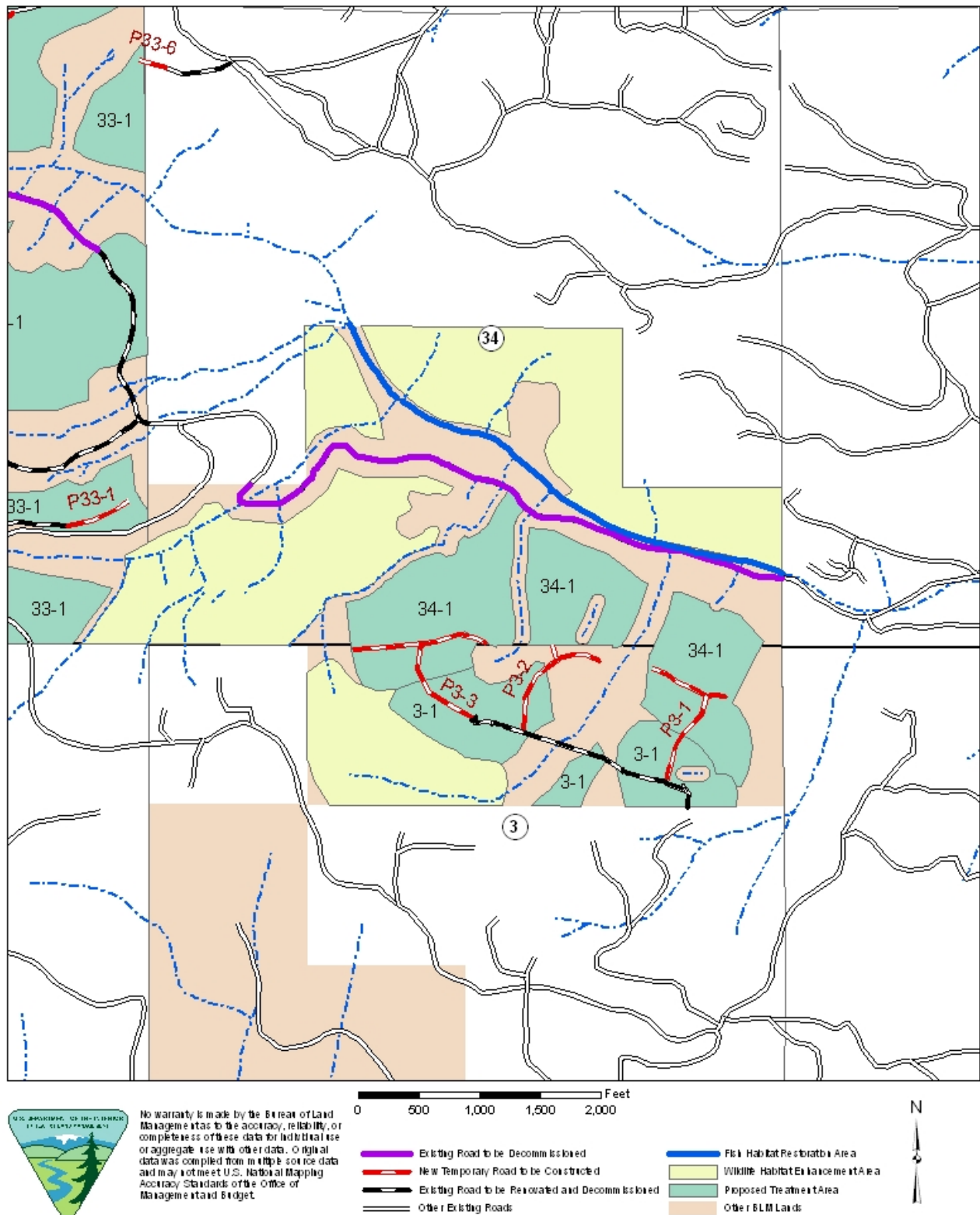
Map 5 - T1S R5W Section 29



Map 6 - T1S R5W Section 33



Map 7 - T1S R5W Section 34 and T2S R5W Section 3



Northern Spotted Owl (NSO) Status Review:

The following information was considered in the analysis of proposed project: a/ *Scientific Evaluation of the Status of the Northern Spotted Owl* (Sustainable Ecosystems Institute, Courtney et al. 2004); b/ *Status and Trends in Demography of Northern Spotted Owls, 1985-2003* (Anthony et al. 2004); c/ *Northern Spotted Owl Five Year Review: Summary and Evaluation* (USFWS, November 2004); and d/ *Northwest Forest Plan – The First Ten Years (1994-2003): Status and trend of northern spotted owl populations and habitat, PNW Station Edit Draft* (Lint, Technical Coordinator, 2005). In summary, although the agencies anticipated a decline of NSO populations under land and resource management plans during the past decade, the reports identified greater than expected NSO population declines in Washington and northern portions of Oregon, and more stationary populations in southern Oregon and northern California.

The reports did not find a direct correlation between habitat conditions and changes in NSO populations, and they were inconclusive as to the cause of the declines. Lag effects from prior harvest of suitable habitat, competition with Barred Owls, and habitat loss due to wildfire were identified as current threats; West Nile Virus and Sudden Oak Death were identified as potential new threats. Complex interactions are likely among the various factors. This information has not been found to be in conflict with the NWFP or the RMP (*Evaluation of the Salem District Resource Management Plan Relative to Four Northern Spotted Owl Reports, September 6, 2005*).

IV. ALTERNATIVES CONSIDERED

Alternatives Considered but Not Analyzed in Detail:

The following action alternative was evaluated but not included in detailed analysis (EA p. 27):

Reduced New Road Construction Alternative

In response to concerns expressed by the public that recent accelerated harvest levels and road construction on private lands in the Roaring Creek area may be having adverse impacts on water quality and fisheries resources, an alternative was considered that would minimize new road construction. By eliminating any new roads over approximately 1,000 feet in length, this alternative would have reduced new road construction to 0.6 miles. Changes in roads necessitated a change in logging systems in order to treat the stands that would no longer be accessible by roads, and it was determined that 572 acres of these stands in the project area would need to be logged by helicopter or dropped from the project. A subsequent analysis determined that the 4.0 miles of new roads proposed in the Proposed Action would not affect water quality or fisheries resources because they are all on the tops of ridges, they are all temporary roads that would be decommissioned when the project ends, they would only be in use during the dry season, there are no new stream crossings, and they are far enough from streams that there would be no increase in sediment into any streams. For these reasons, it was determined that there was no difference in environmental effects to water or fisheries resources between the Proposed Action and the “Reduced New Road Construction” alternative as a result of the reduction in new road construction, and therefore this alternative was not further analyzed.

Alternatives Considered in Detail:

The EA analyzed the effects of the proposed action and the no action alternatives. Complete descriptions of the "action" and "no action" alternatives are contained in the EA, pages 17-27, 77-78 and 104-105.

V. DECISION RATIONALE

Project 1 – Commercial Density Management Thinning

Considering public comment, the content of the EA and supporting project record, the management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis, and the management direction contained in the ROD/RMP, I have decided to implement the selected alternative as described above. The following is my rationale for this decision.

1. The selected alternative:
 - Meets the purpose and need of the project (EA section 2.1), as shown below in Table 1.
 - Complies with the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA pp. 13-15).
 - Is fully compliant with *The Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (July 2007).
 - Considers new information on the northern spotted owl (DR p.14).
 - Will not have significant impact on the affected elements of the environment (DR pp. 15-17) beyond those already anticipated and addressed in the RMP EIS.
 - Has been adequately analyzed.
2. The No Action alternative was not selected because it does not meet the Purpose and Need directly, or delays the achievement of the Purpose and Need (EA section 2.1), as shown in Table 1.

Table 1: Comparison of the Alternatives with Regard to the Purpose of and Need for Action – Project 1

<i>Purpose and Need (EA section 2.1)</i>	<i>No Action</i>	<i>Selected Action</i>
Produce a sustainable supply of timber and other forest commodities (ROD/RMP p. 46).	Does not fulfill. Does not contribute to a sustainable supply of timber.	Fulfills.

<i>Purpose and Need (EA section 2.1)</i>	<i>No Action</i>	<i>Selected Action</i>
Contribute a sustainable supply of timber in support of the PRMP/EIS (Vol. 1, p. xii) assumptions that BLM management programs (including timber sales) would support 544 jobs and provide \$9.333 million in personal income annually.	Does not fulfill. Does not contribute any timber in support of the PRMP/EIS.	Fulfills. Contributes timber harvested on 906 acres of Variable Density Thinning to the sustainable supply of timber.
Manage timber stands to reduce the risk of loss from disease (ROD/RMP p. 46).	Does not fulfill. Laminated root rot disease centers will continue to expand, affecting the growth and survival of surrounding Douglas-fir trees.	Fulfills. Variable Density Thinning will replace root rot infected and susceptible Douglas-fir trees with more resistant species such as western redcedar, western hemlock and hardwoods.
If needed to create and maintain late-successional forest conditions, conduct thinning operations in forest stands up to the 110-year age class (ROD/RMP p. 15).	Partially fulfills. The stands proposed for treatment will continue to mature	Fulfills. Variable Density Thinning of these dense, uniform Douglas-fir stands will accelerate development of late-successional characteristics in comparison with doing nothing.
Manage developing stands to promote tree survival and growth and to achieve a balance between wood volume production, quality of wood and timber value at harvest (ROD/RMP p. 46)	Does not fulfill	Fulfills. Variable Density Thinning of 906 acres will promote survival and growth of the remaining trees, and will result in increased quantity and quality of wood production at final harvest.
Provide for the maintenance of ecologically valuable structural components such as down logs, snags, large trees (ROD/RMP pg. 20).	Does not fulfill.	Fulfills. The selected alternative will maintain existing structural components in the treated stands.
Reduce road density by closing roads that are no longer needed for management activities and that are contributing to water quality degradation (ROD/RMP p.64);	Does not fulfill.	Fulfills. The selected alternative will result in a 6.6 mile reduction in roads in the project area.
Meet Aquatic Conservation Strategy (ACS) requirements by "...closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to ACS objectives and considering short-term and long-term transportation needs" (ROD/RMP p.62).	Does not fulfill.	Fulfills. The selected alternative will result in a 6.6 mile reduction in roads in the project area.

<i>Purpose and Need (EA section 2.1)</i>	<i>No Action</i>	<i>Selected Action</i>
Comply with Section 1 of the O&C Act (43 USC § 1181a) which stipulates that O&C Lands be managed "... for permanent forest production, and the timber thereon shall be sold, cut, and removed in conformity with the principal of sustained yield for the purpose of providing a permanent source of timber supply, protecting watersheds, regulating stream flow, and contributing to the economic stability of local communities and industries, and providing recreational facilities..."	Does not fulfill. This alternative does not provide a permanent source of timber supply from O&C lands, nor does it contribute to the economic stability of local communities and industries.	Fulfills. The selected alternative will provide a permanent source of timber from the O&C lands that will be treated, both now and in the future. As described in section 2.3.5 of the EA, there will be little or no direct, indirect or cumulative effects on stream flows or water quality.

Project 2 – Fish Habitat Restoration

Considering public comment, the content of the EA and supporting project record, the management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis, and the management direction contained in the ROD/RMP, I have decided to implement the selected alternative as described above. The following is my rationale for this decision.

1. The selected alternative:
 - Meets the purpose and need of the project (EA section 3.1), as shown below in Table 2.
 - Complies with the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA p. 77).
 - Is fully compliant with *The Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (July 2007).
 - Considers new information on northern spotted owl (DR p. 14).
 - Will not have significant impact on the affected elements of the environment (DR p.18). beyond those already anticipated and addressed in the RMP EIS.
 - Has been adequately analyzed.
2. The No Action alternative was not selected because it does not meet the Purpose and Need directly (EA section 3.1), as shown in Table 2.

Table 2: Comparison of the Alternatives with Regard to the Purpose of and Need for Action – Project 2

<i>Purpose and Need (EA section 3.1)</i>	<i>No Action</i>	<i>Selected Action</i>
Reduce road density by closing roads that are no longer needed for management activities and that are contributing to water quality degradation (RMP p.64);	Does not fulfill. Does not close any roads at this time.	Fulfills. Decommissions approximately one mile of road that is no longer needed and is contributing to stream sediment impacts
Meet Aquatic Conservation Strategy (ACS) requirements by "...closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to ACS objectives and considering short-term and long-term transportation needs" (RMP, p. 62).	Does not fulfill. Does not meet ACS objectives through treatment of existing roads.	Fulfills. Removing two failing culverts will meet the ACS objectives to maintain and restore water quality, physical integrity of the aquatic system and the sediment regime under which the aquatic ecosystem evolved.

Project 3 – Wildlife Habitat Enhancement

Considering public comment, the content of the EA and supporting project record, the management recommendations contained in the Upper Tualatin-Scoggins Watershed Analysis, and the management direction contained in the ROD/RMP, I have decided to implement the selected alternative as described above. The following is my rationale for this decision.

1. The selected alternative:
 - Meets the purpose and need of the project (EA section 4.1), as shown below in Table 3.
 - Complies with the *Salem District Record of Decision and Resource Management Plan*, May 1995 (RMP) and related documents which direct and provide the legal framework for management of BLM lands within the Salem District (EA p. 77).
 - Is fully compliant with *The Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl* (July 2007).
 - Considers new information on northern spotted owl (DR p. 14).
 - Will not have significant impact on the affected elements of the environment (DR p. 19) beyond those already anticipated and addressed in the RMP EIS.
 - Has been adequately analyzed.
2. The No Action alternative was not selected because it does not meet the Purpose and Need directly (EA section 4.1), as shown in Table 3.

Table 3: Comparison of the Alternatives with Regard to the Purpose of and Need for Action – Project 3

<i>Purpose and Need (EA section 4.1)</i>	<i>No Action</i>	<i>Selected Action</i>
Enhance and maintain biological diversity and ecosystem health in order to contribute to healthy wildlife populations (ROD/RMP pg. 24)	Does not fulfill. Does not enhance biological diversity and ecosystem health.	Fulfills. Enhances biological diversity and ecosystem health on approximately 323 acres.
Design projects to improve conditions for wildlife if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible (ROD/RMP pg. 25);	Does not fulfill. Does not improve conditions for wildlife.	Fulfills. Improves conditions for wildlife by enhancing beneficial late-successional habitat features on approximately 323 acres.

VI. PUBLIC INVOLVEMENT/CONSULTATION/COORDINATION

Scoping:

A description of the proposal was included in the Salem Bureau of Land Management Project Update which was mailed to more than 1000 individuals and organizations. A letter asking for scoping input on the proposal was mailed on October 3, 1997 to 35 individuals, groups and agencies that were potentially affected and/or interested in management activities in the resource area as a whole or in this area. A total of seven letters and oral responses were received as a result of this scoping. Responses to these comments can be found in Appendix 1 of the EA.

Comment Period and Comments:

Based on the original response, the EA was mailed to 7 agencies, individuals and organizations on November 5, 2007. A legal notice was placed in the *Hillsboro Argus* and *McMinnville News-Register* newspapers soliciting public input on the action on November 9 and November 8, 2007, respectively. A total of three comments were received during the 30 day comment period for the EA. Responses to these comments can be found in Appendix A of this DR/FONSI.

Consultation/Coordination:

Project 1 – Commercial Density Management Thinning

Wildlife Consultation

Currently, the Roaring Creek Density Management Project is being planned to be implemented via four separate timber sales FY2008 Blind Barney; FY2009 Cherry Sunday and Hagerty Ridge; and FY2010 Four Corners. Consultation with the U.S. Fish and Wildlife Service (USFWS) as provided in Section 7 of the Endangered Species Act (ESA) of 1973

(16U.S.C. 1536 (a)(2) and (a)(4) as amended) will be accomplished by inclusion of these four timber sales into two separate Biological Assessments. That portion of the Roaring Creek Density Management Project being implemented via the FY2008 Blind Barney timber sale was included within a project-specific Biological Assessment (dated February 20, 2008) while the FY2009 Cherry Sunday and Hagerty Ridge timber sales and the FY2010 Four Corners timber sale will be included the Programmatic Biological Assessment for FY 2009 and 2010 Habitat Modification Projects prepared by the terrestrial sub-group of the North Coast Province Interagency Level 1 Team.

Should the Cherry Sunday, Hagerty Ridge and Four Corners timber sale projects not be implemented (sold) within FY 2009 or 2010 as currently planned but rather in a subsequent year, the project(s) would likely be resubmitted for inclusion in the next appropriate programmatic consultation. If the projects are determined by USFWS to not be in compliance with the standards of the programmatic consultation, the projects would be changed to be in compliance with the programmatic consultation or a project-specific consultation would be conducted. In either case, all of the appropriate Terms and Conditions of the appropriate biological opinion will be incorporated.

Fisheries Consultation

The Roaring Creek density management projects are anticipated to be covered by Endangered Species Act Section 7 Informal Consultation, 700 acres of this thinning project was analyzed in “Endangered Species Act Section 7 Informal Consultation for the 2007-2009 Thinning Timber Sales Programmatic on the Mount Hood and Willamette National Forests and portions of the Eugene and Salem Bureau of Land Management Districts, 20 Watersheds within the Oregon Portion of the Lower Columbia/Willamette River Recovery Domain”. The 700 acres within the Scoggins Creek Watershed analyzed in this Letter of Concurrence dated April 12, 2007 (NMFS no. 2007/00171) will need to be accepted by the Willamette Basin Level 1 Team prior to these acres being treated. The approximately 200 acres remaining may be covered by a subsequent programmatic consultation. Project specific consultation will be conducted if portions of these projects do not fit the Thinning Programmatic Guidelines. Consultation for the Magnuson-Steven Fishery Conservation and Management Act will not be requested as it was determined that these density management actions will not adversely affect Essential Fish Habitat.

Project 2 – Fish Habitat Restoration

Wildlife Consultation

Consultation with U.S. Fish and Wildlife Service (USFWS) as provided in Section 7 of the Endangered Species Act (ESA) of 1973 (16U.S.C. 1536 (a)(2) and (a)(4) as amended) will be accomplished by inclusion of the Roaring Creek Fish Habitat Restoration Project into the appropriate Programmatic Biological Assessment for Habitat Modification Projects prepared by the terrestrial sub-group of the North Coast Province Interagency Level 1 Team. All of the appropriate Terms and Conditions of the appropriate biological opinion(s) will be incorporated.

Fisheries Consultation

This project is covered under a programmatic consultation “Endangered Species Act- Section 7 Programmatic Consultation Biological and Conference Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation” for Fish Habitat Restoration Activities in Oregon and Washington this BO was received from NMFS on April 28, 2007(NMFS No: 2006/06532). This project will be accomplished according to the terms and conditions of this biological opinion which is valid CY2007-CY2012 or subsequent consultation.

Project 3 – Wildlife Habitat Enhancement

Wildlife Consultation

Consultation with U.S. Fish and Wildlife Service (USFWS) as provided in Section 7 of the Endangered Species Act (ESA) of 1973 (16U.S.C. 1536 (a)(2) and (a)(4) as amended) will be accomplished by inclusion of the Roaring Creek Wildlife Habitat Enhancement Project into the appropriate Programmatic Biological Assessment for Habitat Modification Projects prepared by the terrestrial sub-group of the North Coast Province Interagency Level 1 Team. Because implementation of the project is dependant upon funding and it will likely take several fiscal years to fully implement, it would be included in more than one appropriate programmatic consultations if necessary. All of the appropriate Terms and Conditions of the appropriate biological opinion(s) will be incorporated.

Fisheries Consultation

This project is covered under a programmatic consultation “Endangered Species Act- Section 7 Programmatic Consultation Biological and Conference Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation” for Fish Habitat Restoration Activities in Oregon and Washington this BO was received from NMFS on April 28, 2007(NMFS No: 2006/06532). This project will be accomplished according to the terms and conditions of this biological opinion which is valid CY2007-CY2012 or subsequent consultation.

Review of Aquatic Conservation Strategy Objectives:

I have reviewed this analysis and have determined that the project meets the Aquatic Conservation Strategy in the context of PCFFA IV and PCFFA II [complies with the ACS on the project (site) scale]. The following is an update of how this project complies with the four components of the Aquatic Conservation Strategy, originally documented in the EA, Appendix 2, Table 3. The project will comply with:

Component 1 – Riparian Reserves: The proposed action is consistent for the following reasons: a watershed analysis has been completed; road and landing locations have been minimized in Riparian Reserves; wetlands have been avoided when constructing new roads; sediment delivery from roads to streams has been minimized.

Component 2 – Key Watershed: The project area is not within a Key Watershed.

Component 3 – Watershed Analysis: The Upper Tualatin-Scoggins Watershed Analysis was completed in February 2000. Recommendations from the watershed analysis were incorporated into this EA (p. 133).

Component 4 – Watershed Restoration: The proposed actions are consistent with the following components of watershed restoration:

Control and prevention of road related run-off and sediment – Road-related runoff will be reduced by spot rocking on haul routes where the subgrade is soft, ruts are developing, and near stream crossings. This spot rocking would occur prior to and during periods of haul. The road mileage in the watershed will be reduced by 8.0 miles. These actions will control and prevent road-related runoff and sediment.

Restoration of the condition of Riparian vegetation – 244 acres of Riparian Reserve will be treated with density management thinning to promote the development of late-successional forest characteristics on an accelerated timeframe. This will occur with no ground-based equipment off of existing roads and trails.

Restoration of instream habitat complexity – The proposed action includes 1.1 miles of fish habitat restoration which will increase LWD, pool area and quality, improve substrate storage and routing processes

In addition, I have reviewed this project against the ACS objectives at the project or site scale with the following results: The no action alternative does not retard or prevent the attainment of any of the nine ACS objectives because this alternative would maintain current conditions. The proposed action does not retard or prevent the attainment of any of the nine ACS objectives (Table 4).

Table 4: Project's Consistency with the Nine Aquatic Conservation Strategy Objectives

<i>Aquatic Conservation Strategy Objective</i>	<i>Remarks (No Action Alternative addresses all projects)</i>
<p>1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 1</i></p>	<p>No Action Alternatives: The No Action alternative would maintain the development of the existing vegetation and associated stand structure at its present rate. The current distribution, diversity and complexity of watershed and landscape-scale features would be maintained.</p> <p>Density Management Action Alternative: The proposed variable thinning in portions of the Riparian Reserve Land Use Allocation (Riparian Reserves) would result in forest stands that exhibit attributes typically associated with stands of a more advanced age and stand structural development (larger trees, a more developed understory, and an increase in the number, size and quality of snags and down logs) sooner than would result from the No Action Alternative. Since Riparian Reserves provide travel corridors and resources for aquatic, riparian dependant and other late-successional associated plants and animals, the increased structural and plant diversity would ensure protection of aquatic systems by maintaining and restoring the distribution, diversity and complexity of watershed</p>

<i>Aquatic Conservation Strategy Objective</i>	<i>Remarks (No Action Alternative addresses all projects)</i>
	<p>and landscape features.</p> <p>Fish Habitat Enhancement Action Alternative: Current levels of LWD are severely depleted compared to historic conditions. The addition of LWD into Roaring Creek would help restore the diversity and complexity of watershed features to which native aquatic and riparian species are uniquely adapted.</p> <p>Wildlife Habitat Enhancement Action Alternative: Creation of CWD in the project area would enhance, to a small degree, the diversity and complexity of forest stands in the affected watershed. At the landscape scale, diversity and complexity would be maintained.</p>
<p>2. Maintain and restore spatial and temporal connectivity within and between watersheds.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 2</i></p>	<p>No Action Alternatives: The No Action alternative would have little effect on connectivity except in the long term within the affected watersheds.</p> <p>Density Management Action Alternative: Long term connectivity of terrestrial watershed features would be improved by enhancing conditions for stand structure development. In time, these reserves would improve in functioning as refugia for late successional, aquatic and riparian associated and dependent species. Both terrestrial and aquatic connectivity would be maintained, and over the long-term, as Riparian Reserves develop late successional characteristics, lateral, longitudinal and drainage connectivity would be restored.</p> <p>Fish Habitat Enhancement Action Alternative: Placement of logs would connect stream channels to larger floodplain areas.</p> <p>Wildlife Habitat Enhancement Action Alternative: Creation of CWD would improve connectivity within and between watersheds by enhancing habitat for late successional dependant species in the treatment areas.</p>
<p>3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 3</i></p>	<p>No Action Alternatives: It is assumed that the current condition of physical integrity would be maintained.</p> <p>Density Management Action Alternative: Physical integrity of channels at existing stream crossings would be altered for one to several years following repair/maintenance. Within the road prism (estimated at 30 feet maximum width), the channel surface, banks and bed would be compacted (bulk density of soils increased by as much as 30%), vegetation disturbed or removed and the bed/banks within the road prism would be obliterated. Due to the stable nature of channels at these locations, little to no additional disturbance to channel morphology would be expected either upstream or downstream from the crossing.</p>

<i>Aquatic Conservation Strategy Objective</i>	<i>Remarks (No Action Alternative addresses all projects)</i>
	<p>Fish Habitat Enhancement Action Alternative: LWD placements along Roaring Creek would reduce streamflow velocities and increase streambed roughness. Over time, log structures would trap additional wood and sediment moving downstream and increase channel stability and physical integrity of the aquatic system.</p> <p>Wildlife Habitat Enhancement Action Alternative: This project would have no effect on the physical integrity of the aquatic system; therefore the current condition would be maintained.</p>
<p>4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 4</i></p>	<p>No Action Alternatives: It is assumed that the current condition of the water quality would be maintained.</p> <p>Density Management Action Alternative: No-cut buffers in Riparian Reserves would be maintained. The proposed temporary roads are on ridge top or mid-slope locations with no hydrologic connections or proximity to streams or riparian areas. Overall, these action alternatives would be unlikely to have any measurable effect on stream temperatures, pH, or dissolved oxygen. Sediment transport and turbidity in the affected watersheds is likely to increase over the short term as a direct result of road repair and construction, hauling and yarding in and around the Riparian Reserve LUA. Over the long-term (beyond 3-5 years), current conditions and trends in turbidity and sediment yield would likely be maintained under the action alternatives.</p> <p>Fish Habitat Enhancement Action Alternative: Placement of LWD into Roaring Creek would improve water quality by providing some additional shade, restoring sediment transport and storage, and increasing the quantity and complexity of pool habitat.</p> <p>Wildlife Habitat Enhancement Action Alternative: This project would have no effect on water quality; therefore the current condition would be maintained.</p>
<p>5. Maintain and restore the sediment regime under which aquatic ecosystems evolved.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 5</i></p>	<p>No Action Alternatives: It is assumed that the current levels of sediment into streams would be maintained.</p> <p>Density Management Action Alternative: No-cut buffers in Riparian Reserves would be maintained (minimum of 60 feet in treatment areas). Dry season hauling would minimize sediment delivery. After the sale short-term localized increases in stream sediment can be expected during culvert removal and replacement, but BMPs and mitigation measures would be implemented to limit acceleration of sediment delivery to streams. As a result, it is unlikely that this proposal would lead to a measurable change in sediment regime, including increases in sediment delivery to streams, stream turbidity, or the alteration of stream substrate composition or sediment transport regime.</p>

<i>Aquatic Conservation Strategy Objective</i>	<i>Remarks (No Action Alternative addresses all projects)</i>
	<p>Fish Habitat Enhancement Action Alternative: This project would result in short-term increases in sediment during log placement in Roaring Creek and road decommissioning. In the long-term, log structures would trap gravel and other substrate and the road would stabilize; therefore the sediment regime would be restored.</p> <p>Wildlife Habitat Enhancement Action Alternative: This project would have no effect on the sediment regime; therefore the current condition would be maintained.</p>
<p>6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing.</p> <p><i>Both the Action and No Action None of the Alternatives retard or prevent the attainment of ACS objective 6</i></p>	<p>No Action Alternatives: No change in in-streams flows would be anticipated.</p> <p>Density Management Action Alternative: Because the proposed project will remove less than half the existing forest cover, it is unlikely to produce any measurable effect on stream flows. Within the Riparian Reserve LUA, substantial portions of the riparian canopy would be retained, therefore maintaining riparian microclimate conditions and protecting streams from increases in temperature.</p> <p>Fish Habitat Enhancement Action Alternative: This project would have no effect on in-stream flows. It would improve the retention patterns of sediment, nutrient, and wood routing. Therefore the current condition would be maintained</p> <p>Wildlife Habitat Enhancement Action Alternative: The project would have no effect on in-stream flows.</p>
<p>7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 7</i></p>	<p>No Action Alternatives: The current condition of flood plains and their ability to sustain inundation and the water table elevations in meadows and wetlands is expected to be maintained.</p> <p>Density Management Action Alternative: There would be no alteration of any stream channel, wetland or pond morphological feature. All operations, equipment and disturbances are kept a minimum of 60 feet from all wetlands and stream channels. Thus, the current condition of floodplain inundation and water tables would be maintained.</p> <p>Fish Habitat Enhancement Action Alternative: The addition of LWD in Roaring Creek would likely increase the frequency, and potentially the duration of floodplain inundation, as well as promote floodplain development.</p> <p>Wildlife Habitat Enhancement Action Alternative: This project would have very little effect on floodplains or water table elevation;</p>

<i>Aquatic Conservation Strategy Objective</i>	<i>Remarks (No Action Alternative addresses all projects)</i>
	therefore the current condition would be maintained.
<p>8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 8</i></p>	<p>No Action Alternatives: The current species composition and structural diversity of plant communities will continue along the current trajectory. Diversification will occur over a longer period of time.</p> <p>Density Management Action Alternative: No-cut buffers would maintain structural diversity of plant communities within a minimum of 60 feet from all streams and wetlands in treatment areas. Thinning in Riparian Reserve LUA outside of the no-cut buffers would help to restore species composition by allowing more understory development and structural diversity by creating horizontal and vertical variations that are currently lacking in the riparian treatment areas.</p> <p>Fish Habitat Enhancement Action Alternative: The species composition and structural diversity would be improved with the planting of shade tolerant tree species (western red cedar, hemlock, and spruce) and releasing conifers in riparian areas.</p> <p>Wildlife Habitat Enhancement Action Alternative: This project would have very little effect on the species composition and structural diversity of plan communities.</p>
<p>9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.</p> <p><i>None of the Alternatives retard or prevent the attainment of ACS objective 9</i></p>	<p>No Action Alternatives: Habitats will be maintained over the short-term and continue to develop over the long-term with no known impacts on species currently present.</p> <p>Density Management Action Alternative: The proposed action would have no adverse effect on riparian dependent species. Although thinning activities may affect invertebrates within the treatment areas, adjacent non-thinned areas should provide adequate refugia for the species. In the long term, the treatments would restore elements of structural diversity to treatment areas in Riparian Reserves. These attributes would help to provide resources currently lacking or of low quality, and over the long-term, would benefit both aquatic and terrestrial species.</p> <p>Fish Habitat Enhancement Action Alternative: Addition of LWD structures would provide more habitat for populations of native invertebrate and vertebrate riparian-dependent species.</p> <p>Wildlife Habitat Enhancement Action Alternative: Creation of CWD would provide more habitat for populations of native invertebrate and vertebrate riparian-dependant species.</p>

VII. CONCLUSION

Review of Finding of No Significant Impact

I have determined that change to the Finding of No Significant Impact (EA #OR086-07-02 and FONSI – November 2007) covering the Roaring Creek Projects is not necessary because I've considered and concur with information in the EA and FONSI and this Decision Record. No new information was provided that lead me to believe the analysis, data or conclusions are in error or that the selected action needs to be altered. The selected action would not have effects beyond those already anticipated and addressed in the RMP/FEIS.

Supplemental or additional information to the analysis in the RMP/FEIS in the form of a new environmental impact statement is not needed for the reasons described in the Finding of No Significant Impact (EA and FONSI, pages 4-6).


Administrative Review Opportunities

The decision described in this document is a forest management decision and is subject to protest by the public. In accordance with Forest Management Regulations at 43 CFR 5003, protests of this decision may be made within 15 days of the publication of a notice of decision in a newspaper of general circulation. This notice of decision will be published in the *Hillsboro Argus and McMinnville News-Register* newspapers on **February 29** and **February 28**, respectively. To protest this decision a person must submit a written protest to William B. Keller, Tillamook Field Manager, 4610 Third Street, Tillamook, Oregon 97141 by the close of business (4:30 p.m.) on **March 31, 2008**. The protest must clearly and concisely state the reasons why the decision is believed to be in error.

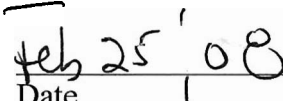
- Fish Habitat Restoration and Wildlife Habitat Enhancement Projects: Any objection to the fish habitat restoration project or wildlife habitat enhancement project design or my decision to go forward with these projects must be filed at this time in accordance with the protest process outlined above.
- Density Management Thinning Project: Any objection to the density management project design or my decision to go forward with this project must be filed at this time in accordance with the protest process outlined above.

At the time of advertisement (notice of sale) what constitutes a protestable decision is limited to 1) whether there has been new BLM direction requiring a change from that in the Roaring Creek Projects EA and/or 2) changes between the timber sale design as described in the Roaring Creek Projects EA and that in the final timber sale contract.

Approved by:



William B. Keller
Tillamook Resource Area Field Manager


Date

APPENDIX A:

RESPONSE TO PUBLIC COMMENTS RECEIVED ON THE ROARING CREEK PROJECTS ENVIRONMENTAL ASSESSMENT AND FONSI (EA#OR086-07-02)

On November 5 2007, a copy of the Roaring Creek Projects EA (Environmental Assessment), including Appendices, was sent to 7 individuals, organizations and agencies (Project Record Document 21). As a result of this scoping effort, three letters and emails providing comments were received - Project Record Document 25 from Doug Heiken at Oregon Wild; Project Record Document 26 from Jake Groves at American Forest Resources Council; and Project Record Document 27 from Niki Iverson at City of Hillsboro Water Department.

The following are comments received and BLM's responses to those comments.

Project Record Document 26 – Jake Groves – American Forest Resource Council

Comment 1: *"... AFRC supports the Proposed Action Alternative as it utilizes appropriate harvesting systems, maximizes the revenues to the government while protecting natural resource values. AFRC supports road construction, reconstruction and maintenance that will help the Salem BLM offer economically viable timber sales, give them greater access to the area to manage for multiple natural resource values."*

BLM Response: Thank you for the comment.

Comment 2: *AFRC does not support the decommissioning of any permanent roads.*

BLM Response: As stated in the EA, the proposed action is designed to move the project area towards achieving the management direction described in the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD/FSEIS)* and *Salem District Record of Decision/Resource Management Plan (ROD/RMP)*. Management objectives in the ROD/RMP include the following:

- Reduce road density by closing roads that are no longer needed for management activities and that are contributing to water quality degradation (ROD/RMP p.64);
- Meet Aquatic Conservation Strategy (ACS) requirements by "...closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to ACS objectives and considering short-term and long-term transportation needs" (ROD/RMP p.62).

Of the approximately eight miles of existing road that would be decommissioned under the proposed actions for the Roaring Creek Projects, 5.6 miles are natural-surfaced roads that are currently inaccessible to vehicles and the other 1.4 miles is a rocked road that is no longer needed for management activities and has numerous culverts that are failing and contributing sediment into

Roaring Creek. Decommissioning these roads clearly meets the management objectives stated above.

Comment 3: *AFRC encourages BLM to offer sales that allow winter harvesting.*

BLM Response: The Density Management Project is designed for dry season activities primarily to reduce the impacts to water quality and fisheries from new road construction, yarding and log haul. BLM is committed to offering timber sales that allow for extended-season harvest and log haul when resource issues such as water quality and ESA-listed fish allow.

Comment 4: *AFRC would like BLM to have more flexibility for fuels treatments to allow purchasers to utilize employees and equipment that they have available.*

BLM Response: Fuels treatments in the Roaring Creek Projects are limited to potentially piling and burning in *Phellinus weirii* root rot pockets. The EA states that piles would be created by hand or mechanical means, which is consistent with your suggestion.

Comment 5: *AFRC supports thinning within riparian reserves, and the use of 25-60 foot wide no-cut buffers to protect streams.*

BLM Response: The proposed action for the Density Management Project has 60-foot buffers on non-fish bearing streams and will be thinning within 244 acres of riparian reserve. This is consistent with your suggestion.

Project Record Document 27 – Niki Iverson - City of Hillsboro Water Department

Comment 1: *“The actions within the Roaring Creek project that we feel have the greatest potential to add sediment to the system above the Slow Sand Plant are the timber yarding and hauling and the road construction and maintenance activities in section 29”. “These activities have the potential to generate a considerable amount of additional sediment, despite the Best Management Practices and seasonal restrictions described in the EA”.*

BLM Response: We disagree that timber harvest and road activities in section 29 have the potential to generate a considerable amount of sediment. As addressed in the EA on pages 60-65, the only expected increase in sediment resulting from proposed project activities is from the replacement of two existing culverts, none of which are located in section 29, and the removal of nine existing culverts, only one of which is located in section 29 above the Slow Sand Plant. Because this culvert is located on an intermittent stream that does not contain water during most of the dry season and removal of the culvert would occur during the dry season, “there should be very little downstream movement of sediment after the work is completed” (page 63).

In section 29 the proposed density management treatment areas are located entirely on stable slopes of

less than 70% slope gradient, and all new road construction is on gently sloping ground on ridgetops. There are no new stream crossings associated with the new road construction and there are numerous project design features such as no-harvest buffers on all streams, seasonal restrictions on all activities (dry season only), and minimum log suspension requirements, that are Best Management Practices to protect water quality.

Comment 2: *“Despite the high potential for increased sedimentation, the EA provides only the following considerations specific to the Slow Sand Plant: Sanitary facilities will be used for workers in the portions of section 29 that are upstream from the Plant and the City of Hillsboro would be notified prior to any ground-disturbing activities upstream from the plant (page 24). Considering the sensitivity and importance of the Slow Sand Plant, these considerations are not, in our opinion, adequate for its protection.”*

BLM Response: As discussed in our response to Comment 1, there are a number of design features incorporated into the proposed action that are expected to minimize sediment and protect water quality in and downstream from the project area. The design features you refer to are listed separately because they are specific to the City of Hillsboro water treatment plant and do not apply to the entire project area.

Comment 3: *The reduced road construction alternative, described on page 27 of the EA, contains a statement that the new road construction identified under the Proposed Action would not affect water quality or fisheries resources for several reasons. City of Hillsboro Water Department would like to review the analysis used to determine that the new road construction would have no effects.*

BLM Response: The “subsequent analysis” you refer to is the analysis described in the Environmental Effects section for water resources for Project 1 in the EA (pages 60-65). Under the subheading “Road Work” on pages 62 and 63 there is a discussion of the expected impacts of the new road construction on sedimentation and turbidity.

Comment 4: *Expected sediment generated by timber haul and road construction and decommissioning would move downstream during the first heavy rains following the activity, and any increase in sediment would be offset by repairing and decommissioning existing roads that are eroding or that could fail in the future. The City of Hillsboro is concerned that short-term impacts of increases in sedimentation could result in serious negative impacts to the Slow Sand Plant, while the benefits of repairing and decommissioning roads would only be realized in the long-term.*

BLM Response: We believe that the proposed actions are unlikely to increase sedimentation or turbidity levels to such a degree that it would negatively impact the City of Hillsboro’s water treatment plant near Haines Falls. Road use would be restricted to the dry season when road related runoff is not present. The most likely locations where sediment could be delivered are at two stream crossings, one on the west side of Section 25 approximately 3.3 miles upstream of the water treatment plant and the other near the center of Section 29 approximately 0.8 mile upstream of the water treatment plant. Currently the Blind Barney road segment upslope of the stream in Section 25 is in poor condition and is a chronic source of sediment. Water has flowed down the road for several hundred feet and has created numerous rills and gullies. The stream has carved a channel into the road. The proposed

action would re-grade the road, improve the drainage by installing water-outs or waterbars, and to reroute the road out of the stream channel. Most of the sediment generated by the proposed action would occur when a new culvert is installed in Section 25 and the existing culvert that is in poor condition is removed. The amount of sediment delivered to stream is expected to be small and of short duration. Best Management Practices would be implemented to reduce sediment risk. The stream in Section 25 is a small flowing, spring feed perennial with about 4 to 5 feet channel width. The stream in Section 29 is small and intermittent. Since the work would occur during the summer low flow period there should be little downstream movement of sediment. Most of the downstream movement of sediment would occur during subsequent fall and winter freshets. Most of the sediment would travel a short distance because the flows are small. Removal of the culvert in Section 29 would eliminate the potential for culvert failure and associated sedimentation. It is likely that any sediment stored in the upper reaches of these streams and released over time during storm events would be an inconsequential amount of the background sediment load when they reach the Tualatin River.

Comment 5: *“..., it is imperative that the City of Hillsboro be allowed to closely coordinate with the BLM and the purchaser/operator to eliminate the risk of putting this Plant out of commission and leaving these communities without a source of potable water.”*

BLM Response: BLM is certainly willing to coordinate with the City of Hillsboro on this project and future land management activities that occur in the City’s municipal watersheds. BLM is agreeable to working with the City in development of a Memorandum of Understanding between BLM and the City which would provide a framework for that future coordination.

Comment 6: *“The BLM has indicated the many measures that would be in place to minimize the potential for increases in sedimentation and turbidity as a result of the Roaring Creek project; however, most of these measures are solely dependent upon the operator’s skills, compliance efforts and commitment.”*

BLM Response: The design features you refer to are not optional measures dependent on the goodwill of the timber sale purchaser and operator; they are legal requirements written into the timber sale contract that are enforced by BLM contract administrators. While there may be discussions between BLM and the purchaser and/or operator concerning appropriate measures for meeting these contractual requirements, it is BLM’s expectation that the contract will be implemented as written.

Comment 7: *“Due to the vulnerability of the Slow Sand Plant and the potential for significant impacts to its operations from the proposed project, the City of Hillsboro should be allowed to review the contractor selection criteria and evaluation, sent notifications prior to thinning and road improvement actions, and have a contact person to work with from BLM and the contractor if issues arise during the project.”*

BLM Response: As discussed in our response to Comment 5, BLM is willing to coordinate with the City of Hillsboro on implementation of this project. City involvement in the sale or award of the timber sale contract is not feasible, however we agree to providing notification prior to ground-disturbing activities and identification of a contact person for any project occurring in the watershed.

Project Record Document 25 – Doug Heiken, Oregon Wild

Comment 1: *“WOPR breeds mistrust. This project would raise less concern if the BLM was not advancing the irresponsible Western Oregon Plan Revision which would retreat from the Northwest Forest Plan and dramatically increase logging of the old forests and stream-side forests that are already too rare. With WOPR in process, we are more skeptical of everything BLM does, thinning included. In this project, BLM proposes to log some suitable owl habitat and in riparian reserves. Since these are also threatened by the WOPR, BLM should preserve options and defer management in these areas until the WOPR is resolved.”*

BLM Response: The Roaring Creek Projects are consistent with the management direction in the Salem ROD/RMP, which is our current land use plan. The Western Oregon Plan Revision (WOPR) process is still underway, and until that process is completed and a Decision is in place, BLM will continue to operate under the current ROD/RMP.

Comment 2: *“FONSI must be based on public comment. It is inappropriate to approve a FONSI before you have taken public comment on the EA. NEPA requires public involvement on this determination not just unilateral agency action. The public might bring issue to your attention that will factor into the decision whether the impacts of the proposed activity are in fact non-significant. In this case potentially significant issues include: impacts on habitat for the red tree vole (possibly even the very rare dusky subspecies) which is an important prey species for the Northern Spotted Owl, impacts on snag and dead wood habitat which is highly under-represented in this intensively managed landscape and for which the BLM lacks NEPA compliant management standards.”*

BLM Response: The impacts of the proposed projects on the environment, including red tree voles and coarse woody debris, were analyzed in the EA (pages 47 and 30, respectively, for red tree voles and coarse woody debris), and no significant impacts were identified. No new information has been presented that was not considered in the EA. It is therefore appropriate to make a Finding of No Significant Impact (FONSI) for the projects based on the analysis documented in the EA. See also the BLM response to your comment 6 for more discussion of red tree voles.

Comment 3: *“Any new information from the recent storm. The early December storm had significant impact on this area. Were there any road washouts or landslides that need to be factored into this NEPA analysis? Did the streams receive a natural pulse of new wood? Did the road hydrology re-equilibrate? Are there new snags and new safety hazards that should be avoided by keeping workers out of the hazard zone?”*

BLM Response: Recent surveys of the project area indicate that a small number of trees were blown down, and there were some areas that experienced minor stream sediment deposition and channel alignments, but there were no known significant environmental impacts caused by the early December storm in the project area.

Comment 4: *“Avoid logging in suitable owl habitat. Units 19-5 and 34-1 are existing suitable habitat. These units are already exhibiting desired characteristics and have all the pieces they need to*

develop into health owl habitat. Future mortality in these stands is expected and will provide “free” thinning, increase growth on remaining trees, and will increase structural complexity. Thinning will simplify these stands and delay recruitment of snags and dead wood that are valuable for spotted owls and their prey. BLM could consider non-commercial wildlife treatments in those two stands, such as down wood creation and snag creation.

There is also significant new information on new threats to the spotted owl (e.g. barred owl) that have not been considered in any range wide NEPA document, so the BLM lacks a credible cumulative impacts analysis for spotted owls, and BLM must avoid impacts to owl habitat until new range-wide cumulative impacts analysis is prepared.

Owl and murrelet survey information needs to be factored into the NEPA analysis at an earlier stage, so that the presence/absence of these species can be factored into the development of alternatives and informed public comments. That being said, even unoccupied habitat should be protected to facilitate growth and expansion of the population.”

BLM Response: As stated within the EA, stands used by spotted owls for nesting, roosting and foraging (suitable habitat) are generally conifer-dominated, 80-years-old or older, multi-storied in structure, and have sufficient snags and downed wood to provide opportunities for owl nesting, roosting and foraging. Mean tree diameter generally exceeds 18 inches DBH and canopy closure generally exceeds 60 percent.

Applying the definition above, a total of approximately 104 acres within the proposed Density Management units have been determined to be suitable spotted owl habitat. This habitat is distributed in two treatment units (19-5 and 34-1) and barely meeting the stated definition of suitable owl habitat, is considered to very marginal in habitat quality. Based upon stand exam data, Unit 19-5 is 49-years-old and has a quadratic mean diameter of 18.1 inches, and Unit 34-1 is 75-years-old with a quadratic mean diameter of 18.6 inches; both stands exhibit a general lack of larger residual green trees and/or legacy snags. Both of the stands within these thinning units developed under a relatively low stocking level, currently 133.6 and 124.9 trees per acre respectively, which together with site conditions likely account for their current quadratic mean diameter being greater than 18 inches and therefore being considered to be spotted owl suitable habitat (albeit of low quality) despite their age.

Left unthinned, these stands would continue on their current developmental trajectories. Rates of attainment of some key features (larger-sized snags and down logs, and larger-sized green trees with well developed crowns) characteristic of older forests with complex structures - higher quality suitable spotted owl habitat, would be delayed. Left unthinned, the current growth rates of trees within these stands would be expected to decline and crowns would be expected to continue to recede; the crown development of some larger-sized trees would be restricted by encroachment from adjacent trees; the balance in the total coarse wood volume between snags and down wood would remain heavily in favor of down wood, and the total coarse wood volume would continue to be skewed towards the more advanced stages of decay.

The proposed variable-density thinning treatments would not be expected to simplify these stands as you state. They would be expected to redirect the current stand developmental trajectories away from increased uniformity and towards a more complex structure characteristic of older forests while minimizing short-term effects on habitat quality. Post-treatment, all of the acres currently considered to be suitable habitat would be expected to continue to function as spotted owl suitable habitat. As a

result of implementing the prescription, the density within and among units would vary. Some trees would be given more room to grow and others would be given less. Leaving various-sized areas unthinned (approximately 21% of the original project area) and lighter thinned areas within the units as a result of implementing the variable-density prescription would provide places where competition-related mortality should continue. This would increase overstory canopy heterogeneity and result in a more uneven pattern of understory (trees, shrubs, and herbs) development. In addition, average stand diameters are expected to increase; crown ratios, crown widths, and limb development (branch size) of the residual trees should increase; natural regeneration of shade-tolerant conifers should be stimulated in the units with a component of shade-tolerant trees in the overstory. Thinning primarily from the Douglas-fir component to increase the relative proportion of the other species would also increase the general species diversity of the treatment area.

The Salem District BLM accurately addressed significant new information on the northern spotted owl through the *Evaluation of the Salem District Resource Management Plan Relative to Four Northern Spotted Owl Reports* (Evaluation) (September 6, 2005). Specifically considered were the following four reports:

- *Scientific Evaluation of the Status of the Northern Spotted Owl* (Sustainable Ecosystems Institute, Courtney et al. 2004);
- *Status and Trends in Demography of Northern Spotted Owls, 1985-2003* (Anthony et al. 2004);
- *Northern Spotted Owl Five Year Review: Summary and Evaluation* (USFWS, November 2004); and
- *Northwest Forest Plan – The First Ten Years (1994-2003): Status and trend of northern spotted owl populations and habitat, PNW Station Edit Draft* (Lint, Technical Coordinator, 2005).

The BLM did not find these reports to be in conflict with the NWFP or the RMP and documented this in a plan amended to the RMP titled *Evaluation of the Salem District Resource Management Plan Relative to Four Northern Spotted Owl Reports, September 6, 2005*. Authors of the four reports provided review on BLM's evaluation.

In producing the Evaluation, the BLM, Forest Service (FS), and USFWS conducted a coordinated review, which summarized key findings of these four documents. These key findings were reviewed by report authors Dr. Steven P. Courtney and Dr. Robert G. Anthony to ensure that it accurately reflects their findings. In addition, agency representatives Terry Rabot, USFWS, and Joseph Lint, BLM, reviewed the document to verify that the USFWS five-year review and the ten-year NSO status and trend report, respectively, were appropriately incorporated. The Evaluation contains the interagency review and summary of the findings from those reports, and it was available to the Roaring Creek Projects Interdisciplinary Team during the environmental analysis process.

While it is desirable to have spotted owl and murrelet survey data at an earlier stage in the NEPA process it is not always possible. Survey data will be available prior to the final decisions for the proposed density management treatments and it will be considered in making those decisions. The EA states in several locations (pages 38, 41, and 85) what would occur should the owl or murrelet surveys result in identification of an occupied site within the vicinity of the proposed treatments. Depending on the specific circumstances, the project would either be modified to meet the standards of the

appropriate programmatic consultation, the Salem ROD/RMP or the NWFP; a project-specific ESA consultation would be initiated with USFWS to address the impacts resulting from the project as planned; and/or based upon the site-specific situation, discussions would be initiated with the North Coast Planning Province Interagency Level 1 Team (including USFWS) to assure compliance with regulations pursuant to Section 7 of the Endangered Species Act of 1973, as amended.

Comment 5: *“Do not reduce wood recruitment in riparian reserves. The EA repeatedly makes the assertion that thinning in riparian reserves will “increase the quality and volume of woody debris in the future” and “increase the number and size of snags and down wood sooner” than the no action alternative. (e.g. EA pp 69, 72, 136,) The analysis in the Cottage Grove Ranger District’s Curran-Junetta EA shows this to be inaccurate. Using data from stand exams modeled through FVS-FFE (West Cascades variant) the Umpqua NF found that the actual effect of thinning is to capture mortality and delay recruitment of large wood for up to 60 years. It makes sense if you think about it: untreated stands continue to grow and competitive mortality will tend to contribute large wood sooner, whereas thinning removes the trees most likely to die and contribute to down wood values, and thinning increases the vigor of the remaining trees which tends to delay recruitment of snags. The BLM cannot just make an assertion that thinning is beneficial without backing it up with a fact-based analysis. After this analysis the EA needs to be corrected as to the loss of large wood recruitment due to captured mortality so that the decision-maker and the public are well-informed, and a careful analysis needs to be done to consider whether thinning in riparian reserves is consistent with ACS objectives. We think that compliance with ACSO #1 is highly questionable.”*

BLM Response:

The Curran Junetta EA you refer to states that thinning in riparian reserves under the action alternative would reduce snag and down wood recruitment rates for up to 30 years, that the majority of the recruitment loss would be from the smaller trees in the stand, and that accelerated growth of larger leave trees would benefit the snag and down wood recruitment process for up to 60 years (pages 167 and 175). This is consistent with the description of the environmental effects of the proposed action in the Roaring Creek Projects EA. Thinning in riparian reserves does increase the size of future LWD and snag recruitment. The science has repeatedly demonstrated that giving trees more room to grow results in faster height and diameter growth. In general, heavy thinning of existing stands at ages 40 and 60 years promoted rapid development of large bole, vertical diversity, and tree-species diversity (Garman et al, 2004). Since the riparian areas that are thinned are allowed to grow more freely and without competition, it would then make sense they would be larger faster than if they were to continue to grow surrounded by suppressed trees competing for light and nutrients. The remaining trees are then recruited by either natural disturbance or felled or girdled for CWD or LWD in streams. The network of “no-harvest” riparian buffers and *other untreated areas* will provide unthinned areas where some suppression-related mortality (creation of smaller-sized snags and down logs) would continue to occur. To say that large wood would be the result of suppression mortality is contrary to the premise of relative density and the desired density for optimal growth.

The Aquatic Conservation Strategy (ACS) was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems. Currently the riparian reserves in the Roaring Creek Projects area mirror the dense uniform stand structure of the remaining uplands. This lack of complexity makes these young stands poorly suited for supporting many riparian-dependent species (Carey 1995; Lindermayer and Franklin 2002). Variable density thinning is a researched and proven way to restore

complexity and diversity in Riparian Reserves (Chan et al. 2004). The Curran Junetta EA, on page 167, also concluded that thinning in riparian reserves met the ACS objectives for desired vegetation characteristics.

References:

Chan Samuel, Anderson Paul, Cissel John, Larsen Larry, Thompson Charley (2004) Variable density management in Riparian Reserves: lessons learned from an operational study in managed forests of western Oregon, USA. Forest Snow and Landscape Research, 78, 1/2, pp. 151-172.

Carey, A.A., 1995: Sciurids in pacific Northwest managed and old growth forest. Ecol. Appl. 5: 648-661.

Garman, Steven L., Cissel, John H., Mayo, James H. 2003. Accelerating development of late-successional conditions in young managed Douglas-fir stands: a simulation study Gen. Tech. Rep. PNW –GTR -557. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 57p.

Lindermayer, D.B., Franklin, J.F., 2002: Conserving forest biodiversity: a comprehensive multiscaled approach. Washington, Covelo and London, Island Press. 351pp.

Comment 6: *“Survey and protect potential habitat for red tree vole. Even if these stands are less than 80 years old, BLM should use its discretion to conduct surveys for red tree vole, especially if there is a chance that very rare dusky red tree voles are present.”*

BLM Response: The Secretary of Interior removed the Survey & Manage Mitigation Measure Standards and Guidelines from the Bureau of Land Management’s Resource Management Plans in the area of the Northwest Forest Plan on July 25, 2007. The Roaring Creek projects conform with this *Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Bureau of Land Management Resource Management Plans Within the Range of the Northern Spotted Owl.*

Within the Tillamook Resource Area, red tree voles are now managed under the BLM’s Special Status Species program as “Bureau Sensitive”. Per Bureau policy, pre-project surveys, including red tree vole surveys, are not required for the management of Bureau Sensitive Species.

As the EA states on page 45, the Tillamook and Marys Peak Resource Areas (Salem District BLM) recently completed an effort, unrelated to pre-project surveys, to locate red tree voles on eastern slopes and foothills of the northern Oregon Coast Range. Patches of older forest considered to be among the best red tree vole habitat on BLM land within the area were identified and a sample of the trees within these stands were climbed and searched for red tree voles and/or red tree vole nests. In conjunction with this effort, a 98-acre unit located in the eastern half of T1S, R5W, section 19 and corresponding to the proposed Roaring Creek Wildlife Habitat Enhancement unit W19-1, was sampled by climbing 70 trees including numerous residual old-growth Douglas-firs. This area is adjacent to three proposed Density Management treatment units (19-1, 19-4 and 19-5). No red tree voles or red tree vole nests were located within the area sampled.

Comment 7: *“Protect soil and understory vegetation by avoiding road building, ground-based logging, and machine piling of slash because these practices have significant adverse impacts on soil and understory vegetation.”*

If the wood placement project will require heavy equipment in the riparian area it will also cause riparian soil disturbance. The EA should more carefully consider the trade-offs. Natural processes should be the favored route to accomplishment of ACS objectives.”

BLM Response: We agree that forest management and resource restoration activities such as road building, ground-based logging, and machine piling of slash can result in significant adverse soil and vegetation impacts. That is the reason we have carefully designed these projects and will implement Best Management Practices and project design features to avoid or minimize resource impacts.

We expect that most of the wood placement work would be done with a walking excavator, which is a lightweight machine (<4 psi ground pressure) with independent drive to all four legs. Little soil disturbance and no loss in site productivity is expected.

Both active and passive management approaches were considered. The vast majority of streams in this resource area are being passively managed. For this area the stream is attempting to recover but it is doing so very slowly. If nothing is done, “The current low levels of LWD in channels would slowly decrease further as more logs rot, break apart, and move downstream. Over time (40+ years), trees near streams would grow and drop into streams and begin to reverse these conditions” (EA page 92). Considering that fish stocks are at risk, we decided that active restoration measures are needed to accomplish ACS objectives.

Comment 8: *“Manage for decadence. Recognize that thinning captures mortality and delays attainment of large snag habitat objectives. In the absence of NEPA compliant standards for managing dead wood habitat, the BLM must avoid impacts to current habitat AND FUTURE dead wood recruitment by better mimicking natural disturbance and leaving behind more dead trees. See more detail below.*

We support the snag creation aspects of this project but would prefer that you not treat trees up to 36” dbh. These trees are likely dominant within the stand and they are likely to grow much larger and become even more valuable in the future. Let’s look at this as a short-term pulse of wood and let’s trust natural processes to create more snags in the future from trees that have grown even larger. We also urge that the snag creation project NOT treat trees rooted in stream banks.”

BLM Response: Recognizing the importance of the management of Coarse Woody Debris habitat, we have included several design features into the Density Management Project. These design features help avoid and/or offset potential impacts to current and future CWD habitat elements resulting from implementation of the thinning project. These design features include the following:

- Thin in a variable-spaced manner to the recommended basal area. Leave islands would be located to protect concentrations of snags and logs, to increase coarse woody debris recruitment needs along stream influence zones, and where features or stand structure would benefit from higher tree density (e.g. slopes over 70%).
- Retain green trees that have significant defect such as cavities or dead, forked or broken tops.
- Conifers greater than the diameter cutting limits that need to be cut to create skyline corridors, skid roads, landing areas, or haul roads, would remain on site for coarse wood enhancement. It is anticipated that a small portion of these felled trees would be removed in order to avoid the creation of operational problems and/or safety hazards.

- If reserve trees must be topped for operational purposes (e.g. lift or tail trees), both portions of the reserve trees would remain on site to augment snag and down woody debris habitat.
- Existing coarse woody debris would be retained to the extent possible, and snags that are cut or knocked over during logging would remain on site.
- Existing snags that are greater than 18" dbh and 20' in height, or snags being actively used by wildlife would be surrounded with two or more leave trees to protect them from logging damage.
- Snag creation would occur within all or a portion of four treatment units totaling 134 acres. Create three Douglas-fir snags per acre in Unit 19-5, and two Douglas-fir snags per acre in Unit 29-4, a 20-acre portion in the southeast part of Unit 33-1, and in Unit 34-1 upon the completion of harvest activities. Trees used for snag creation would be greater than or equal to the post-harvest quadratic mean dbh of the units; treated trees would not include the largest trees in any given area.

As stated in the EA (pg. 105), trees selected for snag creation would generally not include the largest, dominant trees within a given area, or trees with the fullest crowns and/or largest branches. Although trees up to 36 inches dbh may be treated, it is expected that this project would primarily treat trees less than approximately 30 inches dbh. During the design of Project 3 – the Wildlife Habitat Enhancement Project, 36 inches was chosen as the upper size limit for trees specifically to enable the creation of larger snags within unit W19-1. Within this unit, trees with a dbh equal to or smaller than 36 inches would not represent the dominant trees within the area given the presence of individually scattered and clumped old-growth firs with diameters much greater than 36 inches.

Also see the BLM response to comment #5.

Recommended reading: Cline Steven P., Berg Alan B., Wight Howard M., (Oct., 1980). Snag Characteristics and Dynamics in Douglas-Fir Forests, Western Oregon. The Journal of Wildlife Management, Vol, 44, No. 4, pp. 773-786.

Comment 9: *“Manage root rot pockets for habitat diversity. Root rot is a wonderful source of habitat diversity in conifer dominated forests like these. The proposed action is to “fix” root rot problems by making root rot areas resemble other forest characteristics that are already abundant. The EA fails to disclose the adverse environmental impacts of managing root rot as a “forest health problem” instead of a “habitat diversity opportunity.” We urge the BLM not to fell snags in root rot pockets and not to accelerate canopy closure in root rot pockets. Let these areas provide non-conifer habitat diversity and let natural successional processes unfold.*

Retain more dead wood standing to benefit wildlife. Pileated woodpeckers and other species rely on carpenter ants as a primary food source. Down wood in the moist Coast Range tends to get too wet to support carpenter ants, while standing dead trees tend to be dryer and support more ants.”

BLM Response: We also recognize the diversity created by root rot. We believe that we are managing the large amount of *Phellinus weirii* as a “habitat diversity opportunity.” We certainly do not presume to treat all *P. weirii* pockets and remove the disease. In the EA and the prescription we describe removing infected trees within 50ft of known *P. weirii* pockets and planting disease resistant (redcedar) and/or immune tree species (i.e. hardwoods). This also is an effort to speed up the natural progression to disease resistant and immune species within these pockets, and enhance diversity within the stand. Since *P. weirii* occurs in not only discrete pockets but also occurs throughout the stand in a diffuse pattern, many portions of the treatment areas will be treated with the same variable density

thinning as the rest of the stand. Even with the disease, trees continue to grow but will eventually be killed by the disease. This creates snags and down wood of differing sizes and distributions for many years.

In the EA on page 24, there is a Project Design Features that states “existing snags (greater than 18”dbh and 20 feet in height, or snags being actively used by wildlife) would be surrounded with two or more leave trees to protect them from logging damage.” We believe this is consistent with your recommendation.

Comment 10: *“Thinning recommendations. Oregon Wild makes the following recommendations to enhance the quality of restoration-thinning prescriptions. We appreciate that some of these recommendations are already incorporated into the project, and we think you can do even better.”*

BLM Response: The EA includes several pages of design features that clearly address how we plan to achieve the objectives of the project in a manner that will reduce the risk of negative effects to the affected environment. The majority of your recommendations reflect approaches that are already incorporated into the design features.

Comment 11: *“Focus on the smallest trees.” Thinning should focus on the smallest trees that have established due to recent planting or fire suppression and leave a healthy canopy of medium and large trees that are so valuable for wildlife habitat and as future sources of large snags and large down wood. Once the largest trees are protected, “free thinning” of the smaller trees might be appropriate so the full range of small trees are retained.”*

BLM Response: The areas proposed for variable density management treatment consist primarily of relatively dense, single-storied 36- to 75-year-old Douglas-fir stands. The silvicultural prescription calls for variable thinning, primarily leaving the larger-diameter trees with relatively high live crown ratios and healthy appearing crowns (preferably with live crown ratios exceeding 35%). In addition, each unit has a specific diameter cutting limit ranging from 16 to 24 inches. Trees greater than or equal to the diameter cutting limit for each unit will not be cut and harvested. We believe this is consistent with your recommendation, because we are thinning from the “smaller” trees and leaving the healthiest canopy available.

Comment 12: *“Focus on the younger stands, defer the older stands.”*

The areas proposed for variable density management treatment consist primarily of relatively dense, single-storied 36 to 75 year old Douglas-fir stands. Younger trees do have a greater capacity to increase crown depth and maintain stable height-to-diameter ratios than older trees, because more of their potential growth is ahead of them. However, some older stands are also included in the proposed density management action because there are opportunities in these stands to better meet AMA objectives through thinning to increase variability, establish multiple stand layers, increase shade tolerant species, maintain or improve existing crown structure, increase growth rates, and increase coarse woody debris.

The management emphasis for the Northern Coast Range Adaptive Management Area (AMA) is

“management for restoration and maintenance of late-successional forest habitat” (ROD D-15). The Late-Successional Reserve Assessment (LSRA) provides the context for our decision making. In the LSRA mid-seral is defined as 50-70 years with this seral stage providing opportunities for first commercial thinning entry. Several studies, many by Tappeiner and others, have pointed out that coastal Douglas-fir does respond well to thinning up to age 80. In one study young-growth stands were defined as stands 50-70 years old (Tappeiner et al., 1997). The research shows that the stands we are proposing for treatment can and will respond favorably to treatment. The ability to grow in height has very little to do with the ability to retain crowns, and epicormic branching is the result of increased light to the bole, which effectively lowers the crown base. This increase in crown permits trees to greatly increase the amount of foliage they carry, therefore increasing the growth of the trees.

Tappeiner, John C., Huffman, David, Marshall, David, Spies, Thomas A., and Bailer, John D. 1997. Density, ages, and growth rates in old-growth and young-growth forests in coastal Oregon. *Can. J. For. Res.* 27 pp. 638-648.

Comment 13: *“Protect nest core areas for raptors, like northern spotted owl.”*

BLM Response: There are no known raptor nest core areas within any of the project areas. Should a raptor nest be identified within any of the thinning units, standard operating procedures include stipulations within the timber sale contract which would protect any newly discovered nesting raptors including spotted owls.

Comment 14: *Comments regarding thinning in Riparian Reserves*

BLM Response: The Riparian Reserve allocation encompasses one site-potential tree on non-fish-bearing streams and two site-potential trees on fish-bearing streams. The proposed variable density management treatments would occur outside “no-harvest” buffers. In general, there would be a 60’ no-harvest buffer along non-fish bearing streams and 100’ no-harvest buffers along fish-bearing streams. The resulting network of “no-harvest” riparian buffers and *other untreated areas* will provide unthinned areas where some suppression-related mortality (creation of smaller-sized snags and down logs) would continue to occur. Chan et al. (2004) (also referenced in our response to comment #5) reports on many of the benefits to be gained from thinning in Riparian Reserves.

The referenced document (Anderson, Paul D.; Larson, David J.; Chan, Samuel S. 2007. Riparian Buffer and Density Management Influences on Microclimate of Young Headwater Forests of Western Oregon. *Forest Science*, Volume 53, Number 2, April 2007 , pp. 254-269(16)), states on page 254 that:

- With buffers 15 m or greater width, daily maximum air temperatures above stream center was less than 1° C greater, and daily minimum relative humidity was less than 5% lower than for unthinned stands.
- Buffers of widths defined by the transition from riparian to upland vegetation or topographic slope breaks appear sufficient to mitigate the impacts of upslope thinning on the microclimate above headwater streams.

The “no-harvest” buffers that would be placed along both sides of streams within proposed treatment areas are greater than 15 meters in width, so the logical conclusion is that microclimate effects will be adequately mitigated.

Comment 15: *“Make sure long-term benefits out-weigh short-term degradation.”*

BLM Response: The EA (pages 50-53) states that the proposed projects would have a minimal effect on the soil resource. Soils in this area have relatively good physical and biological properties and are moderately resilient to disturbance. Best management practices and project design features (e.g., restricting all logging and road construction activities to the dry season, limiting the extent of disturbance) would minimize soil disturbance intensity so that soil quality is maintained. Potential negative effects of new roads would be reduced by locating them mainly on gently sloping ridges and benches and away from streams. Roads used in the projects would be decommissioned, which would reduce some of the negative effects.

Short-term degradation would be small in comparison to the expected long-term benefits. To summarize, the proposed projects would improve the overall diversity of the area, shorten the time for development of late-successional forest structural features on about 906 acres, repair drainage problems on approximately 5.6 miles of existing roads, reduce road mileage by closing approximately 2.4 miles of roads that are no longer needed for management activities, increase the structural complexity along approximately 1.1 miles of Roaring Creek, and increase wildlife habitat on approximately 323 acres.

Comment 16: *“Avoid unnecessary construction of temporary roads*

If young stand thinning requires construction of temporary roads, the agency should do an analysis that illuminates how many acres of thinning are reached by each road segment so that we can distinguish between short segments of spur that allow access to large areas (big benefit, small cost) and long spurs that access small areas (small benefit, big cost). This can help inform the decision-maker’s balancing of the costs and benefits of thinning and roading.”

BLM Response: The analysis you recommend is located on page 19 in the EA. The analysis of effects of new temporary road construction on soil, water and wildlife resources did not identify any “serious effects”, mainly because all the roads are located on gentle slopes, there are no new stream crossings, and the roads would only be used for timber harvest activities during the dry season.